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File: EPAB

Apr 28, 1999

PUB-NO: EP000911346A2

DOCUMENT-IDENTIFIER: EP 911346 A2

TITLE: Ethylene copolymer and aromatic vinyl graft copolymer and method for producing the same

PUBN-DATE: April 28, 1999

## INVENTOR-INFORMATION:

NAME

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JP

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## ASSIGNEE-INFORMATION:

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IDEMITSU PETROCHEMICAL CO

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APPL-NO: EP98120072

APPL-DATE: October 23, 1998

PRIORITY-DATA: JP29234897A (October 24, 1997), JP29234997A (October 24, 1997)

INT-CL (IPC): C08 F 210/02; C08 F 212/00; C08 F 255/02

EUR-CL (EPC): C08F210/02; C08F010/00, C08F010/02 , C08F290/04

## ABSTRACT:

CHG DATE=19990702 STATUS=O> The present invention provides resin materials endowed with excellent heat resistance, solvent resistance, tensile elongation, toughness, and transparency. Specifically, there are provided an ethylene copolymer having a vinyl group attributed to a diene monomer in the molecular chain and comprising an aromatic vinyl monomer (A), ethylene (B) and a diene monomer (C), and an aromatic vinyl graft copolymer which is a graft copolymerization product of an aromatic vinyl monomer (H) and an ethylene copolymer macromer (I).

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L24: Entry 8 of 9

File: DWPI

Aug 22, 2002

DERWENT-ACC-NO: 1999-246390  
DERWENT-WEEK: 200258  
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TITLE: New ethylene copolymer with vinyl group in molecular chain

INVENTOR: SEPA, M; TESHIMA, H

PATENT-ASSIGNEE: IDEMITSU PETROCHEM CO LTD (IDEM), IDEMITSU SEKIYU KAGAKU KK (IDEM)

PRIORITY-DATA: 1997JP-0292349 (October 24, 1997), 1997JP-0292348 (October 24, 1997)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20020115802 A1	August 22, 2002		000	C08F004/44
EP 911346 A2	April 28, 1999	E	031	C08F210/02
JP 11124420 A	May 11, 1999		019	C08F291/02
JP 11189620 A	July 13, 1999		016	C08F210/02
KR 99037349 A	May 25, 1999		000	C08F212/00
TW 442507 A	June 23, 2001		000	C08F257/02
US 6376614 B1	April 23, 2002		000	C08F257/00

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US20020115802A1	October 23, 1998	1998US-0177557	Div ex
US20020115802A1	February 12, 2002	2002US-0072994	
US20020115802A1		US 6376614	Div ex
EP 911346A2	October 23, 1998	1998EP-0120072	
JP 11124420A	October 24, 1997	1997JP-0292349	
JP 11189620A	September 18, 1998	1998JP-0264715	
KR 99037349A	October 23, 1998	1998KR-0044597	
TW 442507A	October 21, 1998	1998TW-0117455	
US 6376614B1	October 23, 1998	1998US-0177557	

INT-CL (IPC): C08 F 4/44; C08 F 4/64; C08 F 210/00; C08 F 210/02; C08 F 212/00; C08 F 212/04; C08 F 236/20; C08 F 255/02; C08 F 257/00; C08 F 257/02; C08 F 291/02; C08 F 210/02; C08 F 212/00; C08 F 236/00; C08 F 210/02; C08 F 210/00; C08 F 212/00; C08 F 236/04

ABSTRACTED-PUB-NO: EP 911346A

## BASIC-ABSTRACT:

NOVELTY - Introduction of styrenic vinyl group into ethylene chain results in formation of new ethylene copolymer. New copolymer serves as macromer in preparation

of new aromatic vinyl graft copolymer.

DETAILED DESCRIPTION - An ethylene copolymer comprises (in mol%): aromatic vinyl monomer (A) (1-98); ethylene (B) (1-98); a diene monomer (preferably with a styrenic vinyl group) (C) (0.001-10) and optional alpha -olefin (D) (0-90), and contains in the molecular chain a vinyl group attributed to diene monomer.

INDEPENDENT CLAIMS are also included for the following:

(a) a method of production of ethylene copolymer by copolymerization of respective monomers using catalyst containing transition metal compound (E), compound (F), in form of (i) oxygen-containing compound and/or (ii) a compound capable of forming ionic complex through reaction with transition metal compound (E), and/or an alkylating agent (G);

(b) an aromatic vinyl graft copolymer obtained by graft copolymerization of aromatic vinyl monomer (H) and ethylene copolymer macromer (I) (containing in molecular chain a vinyl group attributed to diene monomer and obtained as described above), with the chain attributed to aromatic vinyl monomer having stereospecificity of highly syndiotactic structure; and

(c) a method of production of an aromatic vinyl graft copolymer, comprising graft copolymerization of aromatic vinyl monomer (H) with ethylene copolymer macromer (I), using catalyst containing transition metal compound (E), compound (F) in form of (i) oxygen-containing compound, and/or (ii) a compound capable of forming ionic complex through reaction with transition metal compound (E), and/or an alkylating agent (G).

USE - As heat-resistant elastomer and starting material for production of composite polymeric materials.

ADVANTAGE - The use of ethylene as macromer in production of syndiotactic polystyrene graft copolymer gives product with improved toughness and elongation. Syndiotactic aromatic vinyl graft copolymer has excellent toughness, elongation, compatibility and thermal and chemical stability.

ABSTRACTED-PUB-NO: US 6376614B

EQUIVALENT-ABSTRACTS:

NOVELTY - Introduction of styrenic vinyl group into ethylene chain results in formation of new ethylene copolymer. New copolymer serves as macromer in preparation of new aromatic vinyl graft copolymer.

DETAILED DESCRIPTION - An ethylene copolymer comprises (in mol%): aromatic vinyl monomer (A) (1-98); ethylene (B) (1-98); a diene monomer (preferably with a styrenic vinyl group) (C) (0.001-10) and optional alpha -olefin (D) (0-90), and contains in the molecular chain a vinyl group attributed to diene monomer.

INDEPENDENT CLAIMS are also included for the following:

(a) a method of production of ethylene copolymer by copolymerization of respective monomers using catalyst containing transition metal compound (E), compound (F), in form of (i) oxygen-containing compound and/or (ii) a compound capable of forming ionic complex through reaction with transition metal compound (E), and/or an alkylating agent (G);

(b) an aromatic vinyl graft copolymer obtained by graft copolymerization of aromatic vinyl monomer (H) and ethylene copolymer macromer (I) (containing in molecular chain a vinyl group attributed to diene monomer and obtained as described above), with the chain attributed to aromatic vinyl monomer having stereospecificity of highly syndiotactic structure; and

(c) a method of production of an aromatic vinyl graft copolymer, comprising graft copolymerization of aromatic vinyl monomer (H) with ethylene copolymer macromer (I), using catalyst containing transition metal compound (E), compound (F) in form of (i) oxygen-containing compound, and/or (ii) a compound capable of forming ionic complex

through reaction with transition metal compound (E), and/or an alkylating agent (G).

USE - As heat-resistant elastomer and starting material for production of composite polymeric materials.

ADVANTAGE - The use of ethylene as macromer in production of syndiotactic polystyrene graft copolymer gives product with improved toughness and elongation. Syndiotactic aromatic vinyl graft copolymer has excellent toughness, elongation, compatibility and thermal and chemical stability.

US20020115802A

NOVELTY - Introduction of styrenic vinyl group into ethylene chain results in formation of new ethylene copolymer. New copolymer serves as macromer in preparation of new aromatic vinyl graft copolymer.

DETAILED DESCRIPTION - An ethylene copolymer comprises (in mol%): aromatic vinyl monomer (A) (1-98); ethylene (B) (1-98); a diene monomer (preferably with a styrenic vinyl group) (C) (0.001-10) and optional alpha -olefin (D) (0-90), and contains in the molecular chain a vinyl group attributed to diene monomer.

INDEPENDENT CLAIMS are also included for the following:

(a) a method of production of ethylene copolymer by copolymerization of respective monomers using catalyst containing transition metal compound (E), compound (F), in form of (i) oxygen-containing compound and/or (ii) a compound capable of forming ionic complex through reaction with transition metal compound (E), and/or an alkylating agent (G);

(b) an aromatic vinyl graft copolymer obtained by graft copolymerization of aromatic vinyl monomer (H) and ethylene copolymer macromer (I) (containing in molecular chain a vinyl group attributed to diene monomer and obtained as described above), with the chain attributed to aromatic vinyl monomer having stereospecificity of highly syndiotactic structure; and

(c) a method of production of an aromatic vinyl graft copolymer, comprising graft copolymerization of aromatic vinyl monomer (H) with ethylene copolymer macromer (I), using catalyst containing transition metal compound (E), compound (F) in form of (i) oxygen-containing compound, and/or (ii) a compound capable of forming ionic complex through reaction with transition metal compound (E), and/or an alkylating agent (G).

USE - As heat-resistant elastomer and starting material for production of composite polymeric materials.

ADVANTAGE - The use of ethylene as macromer in production of syndiotactic polystyrene graft copolymer gives product with improved toughness and elongation. Syndiotactic aromatic vinyl graft copolymer has excellent toughness, elongation, compatibility and thermal and chemical stability.

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A18 E12

CPI-CODES: A04-B01B; A04-C01A; A04-G08;